

1. An encasement for a computer processing control unit comprising:
a main support chassis having a plurality of wall supports and a plurality of
junction centers containing means for supporting a computer component
therein;
5 a dynamic back plane that provides support for connecting peripheral and other
computing components; and
means for cooling said encasement.
2. The encasement of claim 1, further comprising means for facilitating air flow in
10 and out of said encasement.
3. The encasement of claim 2, further comprising first and second end plates
removably coupled to said main support chassis and comprising a plurality of ventilation
ports for facilitating the influx of air into and efflux of air out of said encasement, as well
15 as to restrict partial flow of air into said encasement.
4. The encasement of claim 1, further comprising means for further enclosing said
main support chassis to form an encasement.
- 20 5. The encasement of claim 4, wherein said means for enclosing said main support
chassis comprises one or more end plates.

6. The encasement of claim 1, wherein said processing control unit comprises a non-peripherals-based design.
7. The encasement of claim 1, wherein said processing control unit comprises a load bearing design capable of receiving and supporting other structures, as well as functioning as a load bearing component within a structure.
8. The encasement of claim 1, wherein said encasement comprises an equivalent height, width, and depth, each that are less than 4 inches.
9. The encasement of claim 1, further comprising first, second, and third insert members that removably couple to said wall supports, said insert members providing both functional and aesthetic capabilities to said processing control unit.
10. The encasement of claim 1, wherein said main support chassis and its component parts are designed entirely of curves comprising various calculated radii, said radius-based structure providing increased strength and load bearing characteristics to said encasement.
11. The encasement of claim 1, wherein said wall supports comprise a concave radius of curvature to provide structural, load bearing, heat dissipating, and other advantages and/or capabilities to said processing control unit.

12. The encasement of claim 9, wherein said insert members comprise a concave radius of curvature to match or mate with the curvature of said wall supports.
13. The encasement of claim 1, wherein said processing control unit comprises a
5 shape selected from the group consisting essentially of cubical, spherical, conical, triangular, rectangular, and any other conceivable shape capable of housing said processing components.
14. The encasement of claim 1, wherein said computer processing component
10 comprises a multi-planar printed circuit board configuration.
15. The encasement of claim 1, wherein said means for supporting a computer component comprises a plurality of channeled board receivers formed within said junction centers.
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16. The encasement of claim 1, wherein said means for supporting a computer component comprises one or more attachment means selected from the group consisting of screws, rivets, snaps, interference fits, snap-in fits, and others.
- 20 17. The encasement of claim 1, further comprising means for coupling or mounting external members to said encasement module, said means functioning to receive one of an insert member, a back plane, a side wall plane, a structure, an element of a structure, a device, another processing control unit, and/or a mounting bracket.

18. The encasement of claim 17, wherein said means for coupling comprises slide receivers formed on the outside of said junction centers of said main support chassis.
- 5 19. The encasement of claim 1, wherein said encasement is made from materials selected from the group consisting of steel, aluminum, titanium, hybrid metal alloys, copper, magnesium, and other metals and metal alloys; plastic, graphite, composites, nylon, and other non-metallic materials.
- 10 20. The encasement of claim 1, wherein said encasement is capable of withstanding and accepting both applied and impact forces.
21. The encasement of claim 1, wherein said encasement and its component parts are manufactured using one of an extrusion process, a die-casting process, an injection molding process, and others.
- 15 22. The encasement of claim 1, wherein said encasement is electrically charged to repel dust and debris, as well as to reduce the likelihood of a static charge from dust damaging said processing component.
- 20 23. The encasement of claim 1, further comprising an isolated power supply for concentrating the produced power to said processing component.

24. The encasement of claim 1, wherein said dynamic back plane comprises a plurality of ports for connecting peripheral devices and components.

25. The encasement of claim 1, wherein said dynamic back plane comprises a
5 universal port for process coupling two or more processing control units together.

26. The encasement of claim 1, wherein said dynamic back plane comprises a snap-on connection system for connecting peripheral devices, such that once snapped into place, said peripheral device is connected with the system bus of said processing control
10 unit and is operational.

27. The encasement of claim 1, wherein a gap is created and maintained between said wall supports and said computer components as supported within said encasement so as to facilitate air flow between the two.
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28. The encasement of claim 1, wherein said means for cooling is selected from the group consisting of a natural convection cooling system, a liquid cooling system, a forced air cooling system, a thermoelectric cooling system, and any combination of these.

29. A computer processing system comprising:

an encasement module comprising:

a main support chassis having a plurality of wall supports and a plurality
of junction centers containing means for supporting a computer
component therein;

a dynamic back plane that provides support for connecting peripheral and
other computing components directly to a system bus without
requiring an interface;

means for enclosing said main support chassis and providing access to an
interior portion of said encasement module;

one or more computer processing components disposed within said junction
centers of said encasement module; and
means for cooling said interior portion of said encasement module.

30. The computer processing system of claim 29, wherein said encasement module is
a load bearing structure capable of receiving and supporting other structures, as well as
functioning as a load bearing component within a structure.

31. The computer processing system of claim 29, wherein said encasement is
substantially cubical in shape and comprises an equivalent height, length, and depth, each
less than 4 inches.

32. The computer processing system of claim 29, wherein said encasement comprises:

a main support chassis having first, second and third concave side wall supports integrally connected with one or more junction centers;

5 first and second end plates removably coupled to said main support chassis and comprising a plurality of ventilation ports for allowing an influx of air into and an efflux of air out of said encasement module;

a dynamic back plane removably coupled to said main support chassis, said dynamic back plane comprising various ports for connecting peripheral computing components;

10 insert members removably coupled to said wall supports of said main support chassis; and

means for removably securing a multi-planar computer processing component within said encasement module.

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33. The computer processing system of claim 29, further comprising a system bus operable with said computer components to connect various peripheral and other devices and to allow these devices to communicate with each other and said processing control unit.

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34. The computer processing system of claim 29, wherein said computer components comprise one or more electrical printed circuit boards.

35. The computer processing system of claim 34, wherein said electrical printed circuit boards are arranged in a layered configuration within said encasement module.

36. The computer processing system of claim 34, wherein said electrical printed
5 circuit boards are arranged in a tri-board configuration within said encasement module.

37. The computer processing system of claim 29, wherein said means for cooling said interior portion of said encasement module comprises a natural convection cooling system.

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38. The computer processing system of claim 37, wherein said natural convection cooling system comprises:

a volume of air existing within said encasement module, said volume of
air rising towards a top portion of said encasement module as
heated;

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means for naturally compressing said heated volume of air, said means
comprising a constricted area of space within said encasement
module that applies a force to said heated volume of air, thus
increasing its upward velocity and forcing it out said encasement
module, while simultaneously facilitating a recurring influx of
20 ambient air to replace said heated volume of air purged from said
encasement module, such that a natural cycle of air flow is created.

39. The computer processing system of claim 38, wherein said means for naturally compressing said heated volume of air comprises a series of concave wall supports, such that said air is compressed between said wall supports and said processing components.

5 40. The computer processing system of claim 29, wherein said means for cooling said interior portion of said encasement module comprises a liquid cooling system.

41. The computer processing system of claim 29, wherein said means for cooling said interior portion of said encasement module comprises a forced air cooling system.

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42. The computer processing system of claim 29, wherein said means for cooling said interior portion of said encasement module comprises a heat conduction system, wherein at least a portion of said processing control unit is formed of a heat conducting material.

15 43. The computer processing system of claim 29, wherein said means for cooling said interior portion of said encasement module comprises thermoelectric cooling system.

44. The computer processing system of claim 29, wherein said processing control unit comprises no peripheral computing components, just computer processing components.

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45. The computer processing system of claim 29, further comprising at least one peripheral computing component.

46. The computer processing system of claim 29, further comprising a power system that is activated upon insertion of a power cord.

47. The computer processing system of claim 46, wherein said power cord further
5 comprises a clip coupled thereto that comprises leads that must make connect with one or more contacts in said processing control unit for the system to power up.

48. The computer processing system of claim 29, wherein said dynamic back plane
10 comprises a universal port for process coupling another processing control unit.

49. The computer processing system of claim 29, further comprising means for coupling and supporting an external member.

50. The computer processing system of claim 49, wherein said means for coupling
15 and supporting an external member comprises socketed rail receivers formed into said main support chassis, said means capable of removably engaging and coupling one of an external mounting member, an insert member, a structure, a device, a system, and a host structure.

20 51. The computer processing system of claim 29, further comprising means for scaling the processing power of said processing control system, said means comprising process coupling two or more said processing control units together.

52. The computer processing system of claim 29, wherein said processing system reduces radiation contributing to electromagnetic interference.

53. The computer processing system of claim 29, further comprising one or more
5 input/output interfaces for connecting various hardware and peripheral components.

54. The computer processing system of claim 29, further comprising an increased durability factor due to the design of said processing control unit.

10 55. The computer processing system of claim 49, wherein said processing control unit utilizes said means for coupling and supporting an external member to be mounted and functional within any type of conceivable device, assembly, system, and environment to transform each of these into one of a smart device, a smart system, a smart assembly, and a smart environment.

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56. A system for dissipating heat from the interior of an encasement module of a processing control unit using natural convection, said system comprising:

a main support chassis having a plurality of support walls to form an encasement module;

5 one or more computer components removably supported within said encasement module to form a processing control unit, said computer component generating thermal discharge, thus heating the surrounding air; and ventilation ports of sufficient size formed at least at perimeter regions of said encasement module to only allow the passage of air into and out of the interior of said encasement module,
10 said encasement module comprising a design capable of inducing natural, non-mechanically-forced airflow in and out of said ventilation ports.

57. The system of claim 56, wherein said heated air is caused to flow out of said encasement while cooler ambient air is caused to be pulled into said encasement.
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58. The system of claim 56, wherein said encasement module is comprised at least in part of a heat conducting material that functions to dissipate heat from the interior of said processing control unit by natural conduction.
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59. The system of claim 56, wherein said encasement module comprises means for compressing and transferring said heated air particles, said means inducing a natural force on said heated air particles, thus increasing their velocity and causing them to exit

said encasement module through said upper ventilation ports, said means for compressing further facilitating a recurring influx of ambient air through said lower ventilation ports to replace the volume of air particles purged from said encasement module, such that a natural cycle of air flow is created within said processing control unit, said natural cycle
5 of air flow dissipating said thermal discharge from said processing control unit, thus cooling said processing control unit.

60. The system of claim 59, wherein said means for compressing and transferring comprises at least one of said support walls having a concave shape and positioned a
10 distance from said computer component to create a gap, such that said gap comprises a nozzle-like shape to facilitate airflow and to direct said heated air particles away from said computer component and toward the corners of said processing control unit.

61. The system of claim 56, wherein said encasement module is designed to cause
15 airflow to begin shortly after initial thermal discharge from said computer component, such that the temperature of said heated air particles exiting said encasement module is substantially the same, or between 1 and 10 degrees, as the temperature of ambient air particles entering said encasement, thus said heated air particles having a negligible overall effect on the ambient temperature.

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62. The system of claim 56, wherein said encasement module comprises an enclosure boundary or enclosure volume that is smaller than the volume of air particles heated by the thermal radiation output by said computer component, thus facilitating continuous air

flow out of said ventilation ports and eliminating the trapping of air particles within said interior of said encasement.

63. The system of claim 56, wherein said processing control unit may be oriented in
5 any or changing orientations without effecting its heat dissipating capabilities.

64. A method for naturally dissipating heat from the interior portion of a computer encasement via natural convection, said method comprising the steps of:

obtaining a processing control unit comprising:

a main support chassis having a plurality of curved support walls and

5 coverings to form an encasement module;

one or more computer components removably supported within said

encasement module, said computer components generating thermal

discharge, thus heating surrounding air particles within the interior

of said encasement module; and

10 ventilation ports of sufficient size formed at least at upper and lower

regions of said encasement module to only allow the passage of air

particles into and out of said interior of said encasement module;

powering on said processing control unit to allow said computer components

contained therein to become operational, wherein said computer

15 component generates thermal discharge in the form of heated air particles,

thus inducing natural, non-mechanically-forced airflow in and out of said

ventilation ports of said processing control unit.

65. The method of claim 64, wherein said encasement module comprises an enclosure
20 boundary or enclosure volume that is smaller than the volume of air particles heated by
the thermal radiation output by said computer component, thus facilitating continuous air
flow out of said ventilation ports and eliminating the trapping of air particles within said
interior of said encasement.

66. The method of claim 64, wherein said encasement module further comprises:

a volume of air particles existing within a bottom portion of said
encasement module;

5 a volume of air particles existing at a top portion of said encasement
module, said air particles rising towards a top portion of said
encasement module as heated;

means for naturally compressing said heated air particles comprising a
constricted area of space within said encasement module that
10 applies a force to said volume of heated air particles, thus
increasing its upward velocity and forcing it out said encasement
module, while simultaneously facilitating a recurring influx of
ambient air to replace the volume of air particles purged from said
encasement module, such that a natural cycle of air flow is created
15 within said processing control unit, said natural cycle of air flow
cooling said processing control unit.

67. The method of claim 66, wherein said means for naturally compressing said
heated air particles comprises at least one of said support walls having a concave shape
20 and positioned a distance from said computer component to create a gap, such that said
gap comprises a nozzle-like shape to facilitate airflow and to direct said heated air
particles away from said computer component and toward the corners of said processing
control unit.

68. The method of claim 64, further comprising the step of manufacturing at least a portion of said encasement module from heat conducting material to facilitate dissipation of heat by natural conduction as said heat particles are caused to contact said heat
5 conducting material.